REMARKS/ARGUMENTS

In the Office Action, the Examiner noted that claims 1-3, 5-7, 11-12, 14-26, and 30-32 are pending in the application. The Examiner additionally stated that claims 1-3, 5-7, 11-12, 14-26, and 30-32 are rejected. By this amendment, claims 1, 11, 20, and 30 are amended. Hence, claims 1-3, 5-7, 11-12, 14-26, and 30-32 are pending in the application.

Applicant hereby requests further examination and reconsideration of the application, in view of the foregoing amendments.

In the Specification

Applicant has amended the specification to secure a substantial correspondence between the claims amended herein and the remainder of the specification. No new matter is presented.

In the Claims

Rejections Under 35 U.S.C. §103(a)

The Examiner rejected claims 1-3, 5-7, 11-12, 14-26, and 28-32 under 35 U.S.C. 103(a) as being unpatentable over Kalyan et al, U.S. Patent No. 6,826,538 (hereinafter, "Kalyan"), in view of Ouimet et al., U.S. Patent No. 6,308,162 (hereinafter, "Ouimet") and Phillips et al., Pub No. US2002/0116348 (hereinafter, "Phillips"), and Hartman et al., Pub. No. US2006/0224534A1 (hereinafter, "Hartman"). Applicant respectfully traverses the Examiner's rejections.

With reference to claim 1, the Examiner stated that Kalyan discloses a method wherein an interface enabling a user to determine optimum prices of products for sale, comprising:

- a scenario/results processor, configured to enable a user to prescribe an optimization scenario, and configured to present the optimum prices to said user, wherein the optimum prices are determined by execution of said optimization scenario, and wherein said optimum prices are determined based upon estimated

product demand and calculated activity based costs, said scenario/results processor comprising (Col. 2, lines 46-67; Col. 3, lines 1-3; Col. 7, lines 53-63):

- an input/output processor, configured to acquire data corresponding to said optimization scenario from said user, and configured to distribute optimization results to said user (Col. 2, lines 56-59; Col. 3, lines 32-38; Col. 7, lines 53-63, also see Figure 3).

The Examiner noted that Kalyan fails to explicitly disclose:

- an at-large rules template, for specifying rules to govern determination of the optimum prices, said rules comprising:
  - maximum allowable price swing for each of the products for sale
  - maximum allowable swing for average price of each demand group within said plurality of demand groups.

but that Kalyan discloses a control policy that permits a product to be sold if its price is greater than a minimum acceptable value. The Examiner stated that the problem of Kalyan is solved as an optimization problem, which is used to maximize the total expected revenue, and that pricing information inputs can be gathered using elasticity curves or price-demand curves (C. 3, line 60 - C. 4, line 17; C. 6, line 52 -67). The Examiner therefore concluded that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the method of Kalyan and include a control policy that allows a product to be sold if its price is greater than acceptable value, because it allows a user to control the price that they are willing to accept for their product.

The Examiner pointed out that Kalyan fails to disclose a method wherein said input/output processor comprises:

- a template controller, configured to provide first price optimization templates and second price optimization templates, wherein said price optimization templates are presented to said user to allow for prescription of said optimization scenario, and for distribution of said optimization results; and

- a command interpreter; configured to extract commands from said first price optimization templates executed by said user, and configured to populate said second price optimization templates according to result data provided for presentation to said user.

But that Ouimet teaches presenting the user with menus that acquire data and distribute results to the user based on the acquired data (Col. 3, lines 27-67; Col. 4, lines 1-15, 43-64). The Examiner therefore concluded that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the method of Kalyan and include menus that acquire and distribute data to and from the user as taught by Ouimet because it greatly improves the efficiency and convenience of the system by providing the user with a system that is user-friendly.

The Examiner further opined that Kalyan fails to disclose a method wherein said first price optimization template comprise: a plurality of new scenario templates, configured to enable said user to prescribe scenario parameters corresponding to said optimization scenario, but that Ouimet teaches allowing a user to define scenario parameters (Col. 4, lines 42-55), and therefore, it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the method of Kalyan and include a menu wherein a user is able to define scenario parameters as taught by Ouimet because it greatly improves the convenience of the system by providing the user with convenience and a system that is user-friendly.

The Examiner moreover added that Kalyan et al. fails to disclose:

- providing a products template, for specifying the products for sale for which the optimum prices are to be determined, wherein the products for sale may span more than one of the plurality of demand groups; and
- providing a category template, for specifying a product category for price optimization, wherein the product category comprises a plurality of demand groups, each of said plurality of demand groups configured to categorize a set of highly correlated products.

but that Ouimet teaches a menu interface for inputting data and that Ouimet also teaches providing a store manager with optimum prices for which to items that are to be sold (Col. 4, lines 57-64), and that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the method of Kalyan and include inputting the items whose prices are to be optimized.

Still further, the Examiner noted that Phillips teaches categorizing products into categories and then optimizing the prices for those products (Para. 5, 13,34 and 35). The Examiner therefore concluded that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the method of Kalyan and include grouping products into categories, noting that Phillips provides motivation for grouping products into categories because the optimization model becomes easier to manage due to fewer sets of data (Para. 34).

In addition, the Examiner stated that Kalyan fails to disclose a method wherein said plurality of new scenario templates further comprises: a locations template, for specifying a plurality of store groups for which the optimum prices are to be determined, wherein, when determining the optimum prices, the apparatus employs portions of said data that correspond to said plurality of store groups, but that Ouimet teaches determining the optimum prices for one store (Col. 10, lines 34-44), and therefore, it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the method of Kalyan et al. and include specifying for which store locations to determine the optimum prices as taught by Ouimet because a user would want to optimize the prices for more than one store in order to maximize profits throughout all store locations.

The Examiner further pointed out that Kalyan fails to explicitly disclose:

- a scenario controller, coupled to said input/output processor, configured to control acquisition of said data and distribution of said optimization results in accordance with a price optimization procedure, wherein said price optimization procedure is configured to relax constraints of lower priority conflicting rules to render said optimization scenario feasible,

but that Hartman teaches allowing a modeler to specify constrainer and tolerance values and that Hartman further teaches the gain constraints have priority over the data in the case that they are in conflict, both tolerance parameters give the modeler a way to affect how strongly the constraints override the data in the case of conflict (lower values mean strong overriding). The Examiner added that the tolerances allow the model to not be distorted by attempting to bring the gain of every single data point strictly within the specified range; data points that represent gain "outliers" can badly distort a model or even prevent it from converging if undue and unnecessary attention is given to it (0199). The Examiner thus concluded that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the system of Kalyan and include changing the constraints and tolerance parameters in order to allow the values to fall within an acceptable range as taught by Hartman because it allows a user of the system to alter their constraints and tolerances in order to allow the results to fall within a specified range.

Claim 1, as amended herein, is repeated below for ease of reference.

1. An interface enabling a user to determine optimum prices of products for sale, comprising:

a scenario/results processor, configured to enable a user to prescribe an optimization scenario, and configured to present the optimum prices to said user, wherein the optimum prices are determined by execution of said optimization scenario by an optimization engine coupled to said scenario/results processor, and wherein said optimum prices are determined based upon product demand estimated by said optimization engine and calculated activity based costs, said scenario/results processor comprising:

an input/output processor, configured to acquire data corresponding to said optimization scenario from said user, and configured to distribute optimization results to said user wherein said input/output processor comprises:

a template controller, configured to provide first price optimization templates and second price optimization templates, wherein said first price optimization templates are presented to said user to allow for prescription of said optimization scenario, and for distribution of said optimization results, and wherein said first price optimization templates comprise:

a plurality of new scenario templates, configured to enable said user to prescribe scenario parameters corresponding to said optimization scenario, wherein said plurality of new scenario templates comprises:

an at-large rules template, for specifying rules to govern determination of the optimum prices, said rules comprising:

maximum allowable price swing for each of the products for sale; and

maximum allowable swing for average price of each demand group within said plurality of demand groups; and

a command interpreter; configured to extract commands from said first price optimization templates executed by said user, and configured to populate said second price optimization templates according to result data provided for presentation to said user; and

a scenario controller, coupled to said input/output processor, configured to control acquisition of said data and distribution of said optimization results in accordance with a price optimization procedure, wherein said price optimization procedure is configured to relax constraints of lower priority conflicting rules to render said optimization scenario feasible.

In combination, claim 1 recites an interface enabling a user to determine optimum prices of products for sale. The interface has a scenario/results processor to enable a user to prescribe an optimization scenario, and configured to present the optimum prices. The optimum prices are determined by execution of the optimization scenario by an optimization engine coupled to the scenario/results processor, and in particular, the optimum prices are determined based upon both product demand estimated by the optimization engine and activity based costs. In addition, the scenario/results processor has an input/output processor for acquiring data, and for distributing optimization results. The input/output processor includes a template controller that is configured to provide first and second price optimization templates. The first price optimization templates are presented to the user for prescription of the optimization scenario and for distribution of said optimization results. The first price optimization templates include a number of new scenario templates, including an at-large rules template, for specifying rules to govern determination of the optimum prices. The rules include maximum allowable price swing for each of the products for sale and maximum allowable swing for average price of each demand group within a plurality of demand groups. The input/output processor also has a command interpreter that extracts commands from the first price optimization templates, and populates the second price optimization templates according to result data provided for presentation to the user. The scenario/results processor also has a scenario controller that is coupled to the input/output processor. The scenario controller controls acquisition of the data and distribution of the optimization results in accordance with a price optimization procedure, wherein the price optimization procedure is configured to relax constraints of lower priority conflicting rules to render said optimization scenario feasible.

Applicant respectfully disagrees with the Examiner's rejection of claim 1 for the following reasons, and in particular the Examiner's characterization of the teachings of Kalyan and Hartman. More specifically, Applicant respectfully submits that Kalyan fails to teach the following elements of the claimed invention:

- an interface enabling a user to determine optimum prices of products for sale – Kalyan does not teach consumer demand-based price optimization where a user is enabled to find an optimal price for every store/product combination that is being considered. Kalyan, in contrast, teaches supply chain optimization that provides optimal order quantities. The essential bases of these two systems are quite distinct.

- determination of optimum prices by execution of an optimization scenario by an optimization engine coupled to a scenario/results processor, and in particular, the optimum prices are determined based upon both product demand estimated by the optimization engine and calculated activity based costs – Kalyan describes an optimization problem that employs demand coefficients provided from an external source (see Fig. 3 and related description). On the other hand, the invention of claim 1 recites an integrated solution that first estimates demand coefficients ("product demand estimated by the optimization engine"), and that further allows the user to optimize for prices while observing business constraints (calculated activity based costs and scenario rules). In addition, Kalyan does not suggest, allude to, or even hint that his supply chain optimization technique could benefit from the addition of an optimization engine that would provide for the integrated solution described above.

In that Kalyan is absolutely silent with regard to the above noted elements of claim 1, Applicant respectfully asserts that the rejection of claim 1 is improper. In addition, Hartman, Ouimet, and Phillips fail to teach any of the above noted elements.

Furthermore, regarding the Examiner's assertion that Hartman teaches allowing a modeler to specify constrainer and tolerance values, and that Hartman further teaches the gain constraints have priority over the data in the case that they are in conflict, where

both tolerance parameters give the modeler a way to affect how strongly the constraints override the data in the case of conflict (lower values mean strong overriding), Applicant responds that Hartman teaches a control theory application typically used in the arts associated with process control problems, such as may be found in a chemical processing plants. Hartman certainly does not teach or further suggest that his techniques are applicable to optimization problems, or more specifically to merchandising price optimization problems. Applicant respectfully submits that control problems, such as are taught by Hartman, are entirely distinct from the optimization technique as recited in claim 1 in that control problems require continuous intervention (e.g., the feedback systems associated with flying an airplane or positioning an antenna). Optimization problems are entirely dissimilar to control problems because an optimization engine, as recited in claim 1, recommends a decision (e.g., optimum prices), without continual changes. Moreover, Hartman teaches about applying constraints to a modeling (i.e., statistical estimation) process, not to an optimization process. The invention of claim 1 recites applying constraints to an optimization scenario, and furthermore recited that the constraints are provided by the user.

The Examiner relies upon Ouimet and Phillips, each in combination with Kalyan, to teach other limitations of claim 1. But in that Applicant has shown above that Kalyan fails to suggest or provide any other motivation related to an integrated solution for estimating product demand and calculating activity based costs in order to determine optimum prices for products for sale, the teachings of Ouimet and Phillips only add to the silence. None of the aforementioned references even allude to the invention as recited in claim 1.

For all of the above reasons, it is respectfully requested that the rejection of claim 1 be withdrawn.

With regard to claims 2-3, 5-7, 11-12, and 14-19, these claims depend from claim 1 and add further limitations over that subject matter which has been argued above as being allowable over the cited references. Consequently, it is requested that the rejections of claims 2-3, 5-7, 11-12, and 14-19 be withdrawn.

In rejection of claim 20, the Examiner argues points that are similar in nature that those provided in rejection of claim 1. Applicant responds that claim 20 recites the following limitations which are neither taught nor motivated by the teachings of Kalyan, Hartman, Ouimet, or Phillips:

- a method for providing and interface to an apparatus for optimizing prices of products for sale – As noted above, Kalyan does not teach consumer demand-based price optimization where a user is enabled to find an optimal price for every store/product combination that is being considered. Kalyan, in contrast, teaches supply chain optimization that provides optimal order quantities.
- within an optimization engine that is coupled to the computer-based scenario/results processor, estimating the market demand and calculating the demand chain costs for the products, and optimizing the prices according to market demand and demand chain costs – Kalyan describes an optimization problem that employs demand coefficients provided from an external source (see Fig. 3 and related description). On the other hand, the invention of claim 20 recites an integrated solution that first estimates product demand and that further allows the user to optimize for prices while observing business constraints. In addition, Kalyan does not suggest, allude to, or even hint that his supply chain optimization technique could benefit from the addition of an optimization engine that would provide for the integrated solution described above.

Furthermore, the Examiner is referred to the arguments provided in traversal of the rejection of claim 1 as they are directed to the teachings of Hartman. Briefly, Hartman's constraints are applied to a modeling problem, not to an optimization problem.

For the above noted reasons, Applicant respectfully requests that the rejection of claim 20 be withdrawn.

With regard to claim 21-26 and 30-32, these claims depend from claim 20 and add further limitations over that subject matter which has been argued above as being allowable over the prior art. Accordingly, Applicant requests that the rejections of claims 21-26 and 30-32 be withdrawn as well.

CONCLUSIONS

In view of the arguments advance above, Applicant respectfully submits that claims 1-3, 5-7, 11-12, 14-26, and 30-32 are in condition for allowance. Reconsideration of the rejections is requested, and allowance of the claims is solicited.

Applicant earnestly requests that the Examiner contact the undersigned practitioner by telephone if the Examiner has any questions or suggestions concerning this amendment, the application, or allowance of any claims thereof.

I hereby certify under 37 CFR 1.8 that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office on the date of signature shown below.

Respectfully submitted,
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